Pramāṇa

journal of physics

Volume 29, July–December 1987

CONTENTS

Electromagnetism

Wave reflection from inhomogeneous media at normal incidence
Philip D'Souza 121–126

Quantum Mechanics

Adler-Bardeen theorem in path integral formulation
Satish D Joglekar and Anuradha Misra 127–142

A note on traversal time for tunneling *A M Jayannavar* 341–344

An analysis of a quantum chromodynamic structure function
D K Choudhury and A Saikia 345–350

On the solutions of the Wick-Cutkosky model in the instantaneous approximation *G P Malik and L K Pande* 351–358

Group representations and the method of sections
Biswadeb Dutta and N Mukunda 437–454

Effects of Debye shielding in the electron broadening calculations
Boleslaw Grabowski 455–460

General Relativity, Gravitation and Cosmology

$N=1$ supergravity theories coupled to matter and duality transformations *G M Staebler and K T Mahanthappa* 1–20

On the Goldstonic gravitation theory
D Ivanenko and G Sardanashvily 21–38

Poincaré gauge theory from self-coupling *Eric A Lord* 359–368

Statistical Physics

Synergism in electron gas in crossed fields *R Pratap* 231–246

A study of hydrodynamic turbulence using laser transmission
A T Reghunath and V P N Nampoori 461–467

Bifurcation structure and Lyapunov exponents of a modulated logistic map *K P Harikrishnan and V M Nandakumaran* 533–542

Particle Physics

Confinement models for gluons
S B Khadkikar and P C Vinodkumar 39–52

Economic models for Dirac neutrinos in grand unified theories
Anjan S Joshipura and Utpal Sarkar 247–252

An experimental limit on the coupling of a light neutral pseudoscalar particle to hadrons
D Indumathi, C V K Baba, A Roy and S C Vaidya 369–378

The Chou-Yang model, lattice quantum chromodynamics and hyperon-proton elastic scattering
Mohammad Saleem, Muhammad Rafique, Haris Rashid and Fazal-e-Aleem 469–483

The $(q\bar{q})$-pion and its decay constant in a chiral potential model
N Barik, B K Dash and P C Dash 543–557

Nuclear Physics

A search for colour van der Waals interaction
C V K Baba, V M Datar and A Roy 143–154

Fluctuations in $^{12}C + ^{24}Mg$ elastic and inelastic scattering
B Ghosh and R Singh 155–162

Semi-classical smoothing in a non-monotonic field
A K Dutta and J M Pearson 379–384

Range and energy-loss measurement of ^{238}U in Makrofol-N using CR-39 track detector
Atul Saxena, K K Dwivedi, R K Poddar and G Fiedler 485–490

Four quasi-particle level at 2256 keV in ^{182}Re
Y K Agarwal, C V K Baba, D Bhattacharya, S K Bhattacherjee, R K Bhowmik, V M Datar, H C Jain and A Roy 559–575

Spectrum of the high spin neutron hole states of ^{205}Pb
Ramen Majumdar 577–581

Instrumentation

Holographic grating based Ebert spectrography
N C Das and M V R K Murty 167–182

Atomic and Molecular Physics

Rotational analysis of $A^1\Pi$-$X^1\Sigma^+$ bands of $P^{14}N$ and $P^{15}N$: Perturbation studies in the $A^1\Pi$ state *P Saraswathy and G Krishnamurty* 53–78

Laser optogalvanic spectrum of pure bromine discharge
Vinod Kumar, A K Rai and D K Rai 163–166

Bohr-Coster diagrams for multiply ionized states of light elements in the range $Z = 10$ to 20
Lakshmi Natarajan, A V Tankhiwale and Chintamani Mande 253–260

Laser photoacoustic spectroscopy of iodine molecule: Single and two-photon absorption
Putcha Venkateswarlu, G Chakrapani, M C George Y V Rao and C Okafor 261–278

Rotational analysis of 4730 Å band of MgCl
A B Darji, M B Sureshkumar, P M Shah and N R Shah 279–284

Evaluation of one-centre electron interaction integrals over Slater-type atomic orbitals *Anil Kumar and P C Mishra* 385–390

Force field calculations of acetonitrile using CNDO/force method
R Brakaspathy and Surjit Singh 491–496

Bound-free transitions and the dissociation limit
A K Ray, S D Sharma and G D Saksena 497–507

Plasma Physics

Finite Larmor radius and Hall effects on thermal instability of a compressible plasma *R C Sharma and J N Misra* 79–86

Condensed Matter Physics

Hypersensitive and forbidden transitions of trivalent europium ion in $Tb_{1.8}Eu_{0.2}(MoO_4)_3$ single crystal
S Sheik Saleem and T K K Srinivasan 87–92

Shock Hugoniot calculations and melting in Pb
B K Godwal, S K Sikka and R Chidambaram 93–102

On the valence instability in $CeAl_2$ *T G Ramesh and W B Holzapfel* 183–186

Electrical second harmonic generation by $(Pb_x\text{-}Ba_{1-x})\ TiO_3$ and $(Pb_x\text{-}Sr_{1-x})\ TiO_3$ in the autostabilized state
V M Jamadar, T A Patil and S H Chavan 187–192

Theoretical evaluation of the probability of success of the quasi-anomalous method *K Chinnakali, S Parthasarathy and N Elango* 193–206

Dielectric polarization of the solutions of nitrotoluene and cyclohexane
M Śliwińska-Bartkowiak, B Szurkowski and T Hilczer 207–216

Effective medium in dispersed systems
R N Pande, D R Chaudhary and F Gori 217–224

New studies of X-ray diffraction line profiles from aggregates of distorted crystallites I *G B Mitra and T B Ghosh* 285–302

Dielectric properties of RbCl-RbBr mixed crystals
G Sathaiah and Lalitha Sirdesmukh 303–312

Renormalized-free-atom model and Compton profile of hcp cobalt
B L Ahuja, B K Sharma and O Aikala 313–320

Elastic nonlinearity parameters of tetragonal crystals *Jacob Philip* 391–398

Tetrahedral manganese (II) complexes—intense and unique type of mechanoluminophores
B P Chandra, M S K Khokhar, R S Gupta and M Majumdar 399–408

Optical birefringence and order parameter of three nematogens
M Mitra, S Paul and R Paul 409–418

X-ray and dielectric studies of $Sm_2(MoO_4)_3$
M Roy, R N P Choudhary and H N Acharya 419–422

Hubbard model: revisited—a macroscopic renormalization group study *Avinash Singh* 509–516

Mössbauer study of natural staurolite crystals
H V Varma and J Varma 517–521

X-ray determination of thermal expansion of cadmium fluoride and lead fluoride *Wahed Hussain and D B Sirdeshmukh* 583–588

Rapid Communications

Phase dependent superconductivity in the Y-Ba-Cu-O system
Om Prakash, N Venkataramani, S N Bhatia, R Aiyar, R Walia and C M Srivastava L103–L106

Substitutional effect on superconducting transition of Y-Ba-Cu-O
S K Agarwal, B Jayaram, A Gupta and A V Narlikar L107–L110

Critical current measurements on Y-Ba-Cu-O
M K Malik, R V Raghavan, P Chaddah, P K Mishra, G Ravi Kumar, and B A Dasannacharya L111–L112

On the role of acoustic plasmons in high T_c superconductors
V M Nandakumaran L113–L116

Observation of inverse a.c. Josephson effect in bulk Y-Ba-Sr-Cu-O up to room temperature
A K Gupta, B Jayaram, S K Agarwal, Anurag Gupta and A V Narlikar L117–L119

Enhancement of thermopower in the high T_c superconductor $YBa_2Cu_3O_7$ and related compounds
R Srinivasan, V Sankaranarayanan, N P Raju, S Natarajan, U V Varadaraju and G V Subba Rao L225–L230

Critical current measurements on extruded $YBa_2Cu_3O_y$ wires
M K Malik, V D Nair, R V Raghavan, P Chaddah, P K Mishra, G Ravi Kumar and B A Dasannacharya L321–L326

Investigation of novel high T_c superconducting oxides
E V Sampathkumaran, P L Paulose, V Nagarajan, N Nambudripad, A K Grover, S K Dhar, R Nagarajan and R Vijayaraghavan L327–L334

Relation between high T_c superconductivity and structure: A study of $La_{3-x}Ba_{3+x}Cu_6O_{14+\delta}$ and $YBa_2Cu_3O_{7-\delta}$ systems
A K Ganguli, L Ganapathi, K Sreedhar, R A Mohanram, P Ganguly and C N R Rao L335–L339

Criterion for superconductivity in high T_c oxidic compounds
C M Srivastava L423–L428

Effect of pressure on the *d*-spacings of the quasicrystal Al-18 a/o Fe
N Victor Jaya, Mohammad Yousuf, V S Raghunathan and S Natarajan L429–L432

Low temperature heat capacity of $YBa_2Cu_3O_7$
N Nambudripad and S K Dhar L433–L435

Electron-phonon induced superconductivity in high T_c superconductors
P Singh L523–L525

Observation of inter-grain Josephson effects in Y-Ba-Cu-O samples
V S Tomar, A K Gupta, Anurag Gupta, S K Agarwal, B Jayaram and A V Narlikar L527–L531

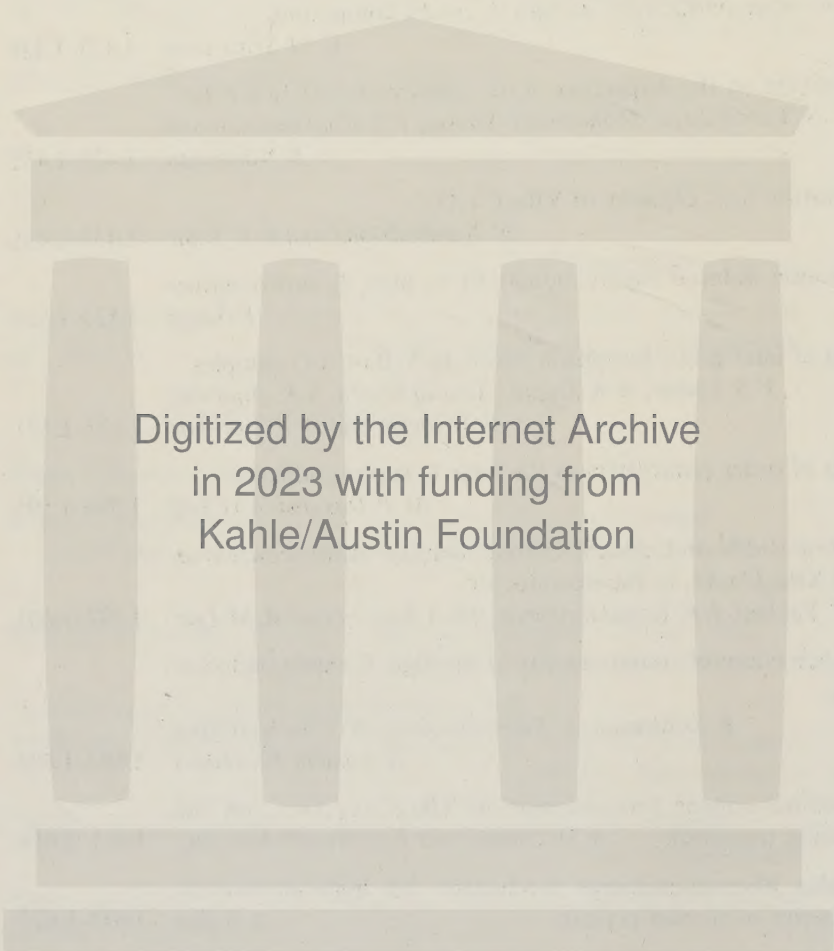
Fluctuations of order parameters in the high T_c superconductors
M P Das and A G Saif L589–L595

The transition width and critical current density measurements on slow-cooled $YBa_2Cu_3O_{7-x}$ superconductors
J V Yakhmi, I K Gopalakrishnan, M A Vaidya and R M Iyer L597–L601

Anomalous behaviour of sound velocity in the high T_c superconductor $YBa_2Cu_3O_7$
R Srinivasan, V Ramachandran, A T Seshadri and G Ananda Ramadass L603–L609

Effect of nominal copper concentration in $YBa_2Cu_{3+x}O_{7-\delta}$ on the superconducting transition *A M Umarji and K S Nanjundaswamy* L611–L614

Electronic plus phonon-exchange mechanism for high-temperature superconductivity in layered crystals *S S Jha* L615–L625



Digitized by the Internet Archive
in 2023 with funding from
Kahle/Austin Foundation

https://archive.org/details/pramana_1987_29_contents

List of forthcoming papers

The one-loop Green's functions of d-dimensional gauge theories..... .....*S V Ketov and Y S Prager*

Observation of superconductivity at 300 K ....*Ram P Gupta, W S Khokle, G S Virdi, B C Pathak, B Jayaram, R C Dubey and A V Narlikar*

A simple apparatus for the measurement of thermoelectric power in the temperature range 4·2–300 K.....*K P Rajeev and N Y Vasanthacharya*

Critical current in silver clad Y-Ba-Cu-O superconducting wires..... .....*R G Sharma, Y S Reddy, S R Jha and S S Dubey*

Conformational analysis of allyl halides from the calculation of indirect spin-spin coupling.....*V Santhanam, V Sobhanadri and S Subramaniam*

An age-dependent model of cavity radiation and its detection II: anti-bunched and thermal characteristics.....*S K Srinivasan*

Gribov-Lipatov inequality and inclusive e^+e^- processes ....*D K Choudhury and A K Misra*

Intensity distribution in the bands of the $B1 \rightarrow X^1\Sigma^+$ system of PbO..... .....*N Rajamanickam*

Nonsingular cosmological models: The massive scalar field case..... .....*B S Sathyaprakash and K P Sinha*

On the addition of silver to high T_c ($Y_1Ba_2Cu_3O_{7-x}$) superconductor..... .....*R G Sharma, Y S Reddy, S R Jha, K D Kundra and D K Suri*

The two-body multipole problem of electrodynamics.....*Somnath Datta*

Voltage current and power relation in an arc plasma in a variable axial magnetic field.....*S N Sen and M Gantait*

Characterization of energy levels in the nucleus ^{170}Lu..... .....*P C Sood, R K Sheline and R W Hoff*

Use of threshold activation techniques in estimating energy distributions of accelerator produced neutrons.....*B K Khasnabis, Tapas Bandyopadhyay, P K Sarkar and G Muthukrishnan*